

REMARKS/ARGUMENTS

Applicant has canceled Claims 20-21 and 23. Accordingly, Claims 1-19, 22, and 24-25 remain pending. As noted, Claims 14-18 are allowed. Claims 1-6 and 19-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Richmond in view of Hansen. Claim 7 stands rejected as unpatentable over Richmond and Hansen and further in view of Pase.

Applicant appreciates the Examiner's thorough review of the application and the clearly articulated rejections in the Office Action. For the reasons set forth below, Applicant respectfully submits that even if Richmond and Hansen were combined, the combination would still fail to teach or suggest all of the elements of the claimed invention.

With reference to Claim 1, the multi-port fluid coupling recited therein essentially comprises a plug member that is plugged into a socket member. Each member houses valved, push-to-connect coupling devices that are brought into connection with one another when the plug member is axially advanced into the socket member. An important consideration in the design of the multi-port fluid coupling is the desire to be able to establish the connections between the coupling devices while the associated fluid lines are under pressure. The fluid pressure in the lines acts to make it more difficult to move the internal valve elements in the coupling devices into their open positions to make the fluid connections. Furthermore, because there are a plurality of coupling devices in each of the plug and socket members, the force required to overcome the valve elements is multiplied several times over. For instance, in the illustrated embodiment having seven coupling devices, the force would be about seven times the force required to connect a single set of coupling devices. As will be appreciated, the required force can become considerable, and hence persons of lesser strength or ability may not be able to make the connection if they relied solely upon their own strength pushing axially on the plug member.

The invention addresses this potential problem by providing a multi-port fluid coupling wherein cooperative cam members are included on the socket and plug members. More

particularly, the respective cam members are configured so that one is rotatable relative to the other, and the rotation of the one cam member converts the rotational motion into axial motion of the plug into the socket. Thus, Claim 1 at the end recites “one of the first and second cam members being rotatable relative to the other about an axis of the multi-port fluid coupling *so as to axially advance* the plug body into the socket body to connect the first and second coupling devices.”

This conversion of rotational motion into axial motion does not occur in Hansen’s device. The lead-in portion **39** of the bayonet locking slot of Hansen’s device is purely axial. Therefore, to make the connection between the plug and socket, the user must use his or her strength to axially push the plug fully into the socket, so that the pins **42** on the plug move all the way to the end of the axial slot portion **39** in the locking sleeve **36**; at this point the connection between the fluid coupling devices has already been established. Only then is it possible to rotate the sleeve **36** so as to move the pins **42** along the circumferentially extending portion **40** of the locking slot. This rotational motion of the sleeve does not cause any axial advancement of the plug into the socket, since the plug has already been fully advanced to its connected position. Thus, Hansen neither teaches nor suggests any cooperative cam members as claimed in Claim 1. For these reasons, it is respectfully submitted that Claims 1-7 are patentable.

Additionally, Claims 8-13 are patentable for further reasons independent of the above-noted ones, as acknowledged in the Office Action.

Claim 19 is directed to a socket member having cam members for engaging cooperative cam members of a plug member. Applicant has amended Claim 19 to recite that the cam members comprise cam rollers. Hansen does not teach or suggest cam rollers on a socket member. Hansen’s socket member **10** indeed does not include any type of cam member, as previously noted, but only a sleeve **36** having bayonet locking slots **39, 40**, which do not function as cam members. Hansen’s plug member **24** has pins **42** rather than rollers. There is no apparent reason why it would have been obvious to substitute rollers for Hansen’s pins **42**, because the pins do not function as cam members and thus a rolling action would not be of particular

advantage to Hansen's purpose for his pins. In fact, using rollers instead of pins may well make the locking of the bayonet lock less secure. Accordingly, it is submitted that the socket member of Claim 19 is not suggested by the prior art. Therefore, Claim 19 is patentable.

Claim 22 is directed to a plug member that includes a rotatable actuator having cam members. The claim has been amended to recite that the cam members comprise cam surfaces each including a first portion that extends helically along the actuator with a rearward axial component toward a rear end of the actuator. This helical portion is what converts the rotational motion of the actuator into axial motion of the plug member when the cam surfaces of the actuator are engaged with cam members on a socket member as previously described. It has already been explained that Hansen does not teach or suggest this feature, but instead teaches a purely axial slot portion 39. Accordingly, Claims 22, 24, and 25 are patentable.

For the foregoing reasons, it is submitted that all pending claims are patentable and in condition for allowance.

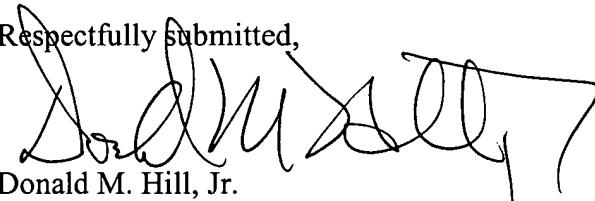
Consideration Of Previously Submitted Information Disclosure Statement

It is noted that an initialed copy of the PTO Form 1449 that was submitted with Applicant's Information Disclosure Statement filed on November 24, 2003 has not been returned to Applicant's representative with the Office Action. (Original) Accordingly, it is requested that an initialed copy of the Form 1449 be forwarded to the undersigned with the next communication from the PTO. In order to facilitate review of the references by the Examiner, a copy of the Information Disclosure Statement and the Form 1449 are attached hereto. Copies of the cited references were provided at the time of filling the original Information Disclosure Statement, and, therefore, no additional copies of the references are submitted herewith. Applicant will be pleased to provide additional copies of the references upon the Examiner's request if it proves difficult to locate the original references.

Conclusion

Based on the above amendments and remarks, it is submitted that the application is in condition for allowance. The Examiner is invited to telephone the undersigned if there are any remaining issues requiring resolution before a Notice of Allowance can be issued.

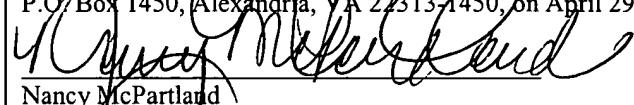
It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Non Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 29, 2004


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